

REMARKS

Upon entry of the present amendment, claims 1, 9, 13 and 19 will have been amended to clarify features of Applicant's invention. Additionally, claims 3 and 4 will have been amended to ensure proper dependency. Several other dependent claims have been amended and claims 22-24 have been submitted for consideration.

In view of the herein contained amendments and remarks, Applicant respectfully requests reconsideration and withdrawal of each of the outstanding rejections set forth against the claims pending in the present application together with an indication of the allowability of all claims pending herein, in due course. Such action is respectfully requested and is now believed to be appropriate and proper.

In the outstanding Official Action, the Examiner rejected claims 1, 3-9, 11-13 and 16-18 under 35 U.S.C. § 103 as unpatentable over SUZUKI et al. (U.S. Patent No. 5,048,963). Claims 19-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over SUZUKI et al. in view of HAGIWARA (U.S. Patent No. 5,838,433).

Applicant respectfully traverses each of the above-noted rejections and submits that they are inappropriate. In particular, Applicant submits that the combination of features recited in each of Applicant's independent claims and certainly the features recited in Applicant's dependent claims, in the claimed combinations, are not taught, disclosed nor rendered obvious by the disclosures of SUZUKI et al. or even SUZUKI et al. in combination with HAGIWARA.

Accordingly, Applicant respectfully requests reconsideration of the outstanding rejections and an indication of the allowability of all the claims pending in the present application, in due course.

Applicant's invention is directed to a pattern reading apparatus. As recited, for example, in claim 1, the pattern reading apparatus of Applicant's invention includes a minute area light source that causes an illumination light beam to be incident on an object surface having a pattern formed thereon as an object to be read. An objective lens converges light beam carrying the information of the pattern and a spatial filter, having a shading portion that shades a portion of the light beam that forms an image of the light source from the light beam. The spatial filter shields a non-diffusing component of a light beam and permits the formation of an image by the diffusing component of the light beam. The spatial filter is positioned such that a size of an image of the light source formed by the objective lens is smaller than a size of the image at a paraxial image point. Further, the pattern reading apparatus includes an imaging lens that forms the image of the pattern using the portion of the light beam that passes through the spatial filter.

The combination of features defining Applicant's invention and as recited in, e.g., claim 1, is not taught, disclosed nor rendered obvious by SUZUKI et al. The pattern reading apparatus as defined by the claims of the present application is clearly set forth in Applicant's disclosure particularly with respect to Figs. 10A, B and C.

In setting forth the rejection, the Examiner noted that SUZUKI et al. discloses a system for detecting a pattern including a light source 21, an object surface 29, an objective lens 27 and a spatial filter 32. The Examiner admits that SUZUKI et al. does not disclose an imaging lens but asserts that it would have been obvious to have an imaging lens in order to make the image of the light beam. With regard to the recitations of claim 16, the Examiner asserts that it would have been an obvious design

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choice to modify the position of the spatial filter or the objective lens as claimed. Applicant respectfully traverses the above rejection and submits that it is inappropriate.

By the present Response, Applicant has incorporated the limitation of claim 16 into claim 1. Applicant respectfully submits that in the claimed composition, positioning the spatial filter such that a size of an image the light source formed by the objective lens is smaller than a size of the image at a paraxial image point is not an obvious design choice. In particular, Applicant respectfully submits that the Examiner cannot dismiss a feature not disclosed by the prior art merely by relabeling the feature as a design choice. 35 U.S.C. requires an evidentiary basis for an Examiner's conclusion. The Examiner has not set forth any such evidentiary basis and for this reason alone, the Examiner's rejection is inadequate and insufficient. Moreover, in an optical system, one cannot just randomly change the positions of filters or objective lenses. Any such change will result in changes to the focal points and changes in the operation of the entire system. Taking the Examiner's position to its logical conclusion, the Examiner is essentially asserting that the reengineering of optical systems is a matter of design choice. Anyone of any experience in the optical engineering field knows that this is not true.

Moreover, the "different testing purposes" set forth in the Examiner's rationale for the rejection is certainly not based on any disclosure of SUZUKI et al. Rather, these "different testing purposes" come from Applicant's disclosure and thus the Examiner's obviousness is based upon impermissible hindsight and upon the use of Applicant's disclosure as a roadmap. This is clearly not the proper standard for a rejection under 35 U.S.C. § 103.

Moreover, as explicitly set forth in Applicant's disclosure at, inter alia, the middle paragraphs of page 22, the location of the spatial filter, as recited in Applicant's claim 1 provides significant and substantial advantages which include maintaining the spread of the image of the minute light area to a minimum. The Examiner has not provided any disclosure of the benefits resulting from Applicant's invention, but has merely asserted as a conclusion, that these features are obvious design choices. It is respectfully submitted that the Examiner is incorrect and that Applicant's claims are patentable. An action to such effect is respectfully requested in due course.

Applicant's invention is also directed to a pattern reading apparatus including a minute area light source that causes a substantially parallel illumination light beam to be incident on an object surface having a pattern formed thereon as an object to be read. Applicant's pattern reading apparatus further include an objective lens, a spatial filter and (in claims 9 and 13) an imaging lens. It is respectfully submitted that the features of Applicant's invention as recited in claims 9, 13 and 19 are not taught, disclosed nor rendered obvious by SUZUKI et al. even in combination with HAGIWARA.

In particular, reviewing Fig. 5 of SUZUKI et al., it is quite clear that a substantially parallel illumination light beam is not incident onto an object surface having a pattern formed thereon. In particular, a review of Fig. 5 clearly shows that the light beam incident onto the object surface 29 is not a substantially parallel light beam. Similarly, Fig. 10 also clearly indicates that the light beam incident onto the object surface 98 is not a substantially parallel light beam. Regarding Fig. 5, the surface of the wafer 29 is located at the conjugate of the aperture spot 25. In Fig. 10, the converging point 97 is the conjugate of the position of the wafer 98. Accordingly, it is clear that SUZUKI et al.

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does not disclose a pattern reading apparatus where a substantially parallel illumination light beam is incident onto an object surface having a pattern formed thereon, as recited in Applicant's claims. Accordingly, Applicant respectfully submits that each of the claims pending herein is clearly patentable over the SUZUKI et al. disclosure. Nor does HAGIWARA disclose the above-noted features that are missing from SUZUKI et al.

Further, the Examiner has again set forth no proper motivation for modifying the disclosure of SUZUKI et al. with the teachings of HAGIWARA. The asserted motivation set forth by the Examiner "to facilitate the filtering process" has no basis in the combined disclosures of SUZUKI et al. and HAGIWARA and can be used to justify the modification of virtually any device.

Yet additionally, claims 3 and 11 recite a particular range for the distance between the spatial filter and the surface of the objective lens nearest to the spatial filter. The Examiner has set forth no basis whatsoever for selecting this particular range. Thus, the Examiner's conclusion of obviousness is inappropriate and improper.

For each of the above-noted reasons and certainly for all of the above-noted reasons, Applicant respectfully submits that each of the Examiner's rejections is inappropriate and improper. Accordingly, Applicant respectfully requests reconsideration and withdrawal of each of the outstanding rejections together with an indication of the allowability of all the claims in the present application.

The dependent claims in the present application are submitted to be patentable at least based upon their dependence from a shown to be allowable base claim as well as based upon their own individual recitations.

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Moreover, the herein submitted new dependent claims are also submitted to be patentable based both upon their dependence from a shown to be allowable claim as well as based upon their own particular recitations, in the claimed combinations.

SUMMARY AND CONCLUSION

Applicant has made a sincere effort to place the present application in condition for allowance and believes that he has now done so. Applicant has amended each of the independent claims to even more clearly distinguish the present application from the references cited by the Examiner.

Applicant has discussed the disclosure of the references cited by the Examiner and has pointed out the significant and substantial shortcomings thereof with respect to the recitations of Applicant's claims. Applicant has further discussed the features of Applicant's claims with regard to the disclosure of the cited prior art and has shown how the particular combinations of features recited in each of Applicant's claims is not taught, disclosed nor rendered obvious by the cited references. Applicant has also pointed out the significant shortcomings in the Examiner's motivation as well as in his assertions of obviousness and design choice.

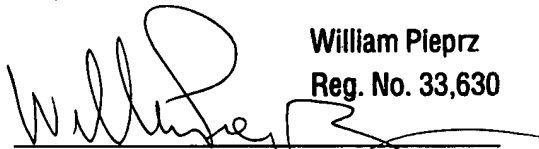
Accordingly, Applicant has provided a clear evidentiary basis supporting the patentability of all the claims in the present application and respectfully requests an indication to such effect in due course.


Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

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Should the Examiner have any questions or comments regarding this Response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

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